This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) An MRI imaging system useful for imaging a body comprising,

a) a nuclear spin tomography device capable of obtaining data for locally-resolved imaging of the magnetic resonance behavior of the atomic nuclei in a selected field of view in ~~a~~ said body, the device being made and programmed in a manner that ~~the~~ said body can be exposed by the device to first high frequency ~~and~~ magnetic field gradient echo pulse sequences that are spatially coded in each direction of space and that produce magnetization in a body in a manner that the magnetization of a medium that is flowing in at least one direction in space in the body can be attenuated by dephasing the spins of the atomic nuclei in the medium,

wherein the ~~gradient echo pulse sequences are generated in a manner that~~ body can also be exposed to an additional gradient contribution ~~in each direction in space in which the medium is flowing in the body occurs~~ at the same time as said first gradient echo pulse sequences and wherein said additional gradient is added to ~~the~~ said first gradient echo pulse sequence ~~needed for said spatial coding in each direction of space~~ without influencing said space coding,

wherein said additional respective gradient echo pulse sequence combines with said first gradient echo pulse sequence to provide ~~has~~ a gradient moment of the first order, M_1, which is maximized by setting the gradient field intensity and the slew rate to a respective maximum value, and said first gradient echo pulse sequences ~~needed for said spatial coding have~~ has a gradient zero order moment, M_0, which is essentially unchanged by said additional gradient contribution, and

b) an MR contrast medium that is ~~taken up by the~~ acceptable for administration to said body.

2. (Previously Presented) A system according to claim 1, wherein the magnetization of the medium flowing in at least one direction in space in the body can be attenuated by dephasing of the spins by maximizing gradient moments of order

i $M_i(t)$ in such direction in space according to the following relation:

$$M_i(t)=y\bullet \int_0^t G(t').^{t'i}dt'$$

wherein

i is an integer greater than zero,

γ is the gyromagnetic ratio of the atomic nuclei,

G(t') is a time-dependent gradient field intensity in such direction in space and

t is the time interval that has passed since the emission of a high frequency pulse for excitation of the atomic nuclei.

3. (Previously Presented) A system according to claim 2, wherein the magnetization of the medium flowing in at least one direction in space in the body can be attenuated by dephasing of the spins by maximizing gradient moments of the first order $M_1(t)$ in such direction in space according to the following relation:

$$M_1(t) = \gamma\bullet \int_0^t G(t') \bullet t'dt' \ .$$

4. (Previously Presented) A system according to claim 1, wherein gradient echo pulse sequences are produced in the respective directions in space by inserting flow dephasing gradient pulses into flow-compensated imaging gradient echo pulse sequences.

5. (Currently Amended) A system according to claim 4 3, wherein M_1 satisfies the following relation:

$$M_1(t; Gbipolar, tramp, tplateau, tsep) = \gamma\bullet Gbipolar \,\&\, (tramp + tplateau) \bullet (2tramp +$$

tplateau + tsep)

wherein

γ	is the gyromagnetic ratio of the atomic nuclei,
Gbipolar	is the maximum gradient field intensity,
Tramp	is rise/fall time when the gradient field is turned on/off,
tplateau	is the time interval during which *Gbipolar* is reached, and
tsep	is the time interval between two gradient pulses.

6. (Previously Presented) A system according to claim 1, wherein the device comprises

- a static magnet,
- gradient devices for producing gradient pulses in three directions in space that are orthogonal to one another,
- a transmission device for producing high frequency signals,
- a receiving device for high frequency signals,
- a device for triggering gradient devices and the transmission device,
- an evaluation device, and
- a display device.

7. (Previously Presented) A system according to claim 1, wherein the MR contrast medium can be administered intravenously to a human or animal body.

8. (Previously Presented) A system according to claim 1, wherein the MR contrast medium is lymph-passable and/or plaque-passable.

9. (Currently Amended) A ~~process for locally-resolved imaging of the magnetic resonance behavior of atomic nuclei in a selected field of view in a body in which data from the field of view are obtained using a nuclear spin tomography device by which the body is exposed~~

method for obtaining an MRI image of a body comprising administering to the body an MR contrast medium, exposing the body in a nuclear spin tomography device to first high frequency ~~and~~ magnetic field gradient echo pulse sequences that are spatially coded in each direction of space and that produce magnetization in the body in a manner that the magnetization of a medium flowing in at least one direction in space is attenuated in the body by dephasing of the spins of the atomic nuclei in the medium ~~and by an MR contrast medium being supplied to the body, wherein the gradient echo pulse sequences are generated in a manner that~~ and generating an additional gradient contribution in each direction in space ~~in which the medium is flowing in the body occurs~~ at the same time as said first gradient echo pulse sequences, ~~and~~ wherein said additional gradient is added to ~~the~~ said first gradient echo pulse sequences ~~needed for said spatial coding~~ in each direction of space without influencing said space coding, and wherein said respective additional gradient echo pulse sequence ~~has~~ combines with said first gradient echo pulse sequence to provide a gradient moment of the first order, M_1, which is maximized by setting the gradient field intensity and the slew rate to a respective maximum value, and said respective first gradient echo pulse ~~sequences needed for said spatial coding have~~ sequence has a gradient zero order moment, M_0, which is essentially unchanged by said additional gradient contribution.

10. (Currently Amended) A ~~process~~ method according to claim 9, wherein the magnetization of the medium flowing in at least one direction in space in the body is attenuated by dephasing of the spins by maximizing gradient moments of order i $M_i(t)$ in such direction in space according to the following relation:

$$M_i(t) = \gamma \int_0^t G(t') \cdot t'^i \, dt'$$

wherein

i is an integer greater than zero,

γ is the gyromagnetic ratio of the atomic nuclei,

G(t') is a time-dependent gradient field intensity in such direction in space and

t is the time interval that has passed since the emission of a high frequency pulse for excitation of the atomic nuclei.

11. (Currently Amended) A ~~process~~ method according to claim 10, wherein the magnetization of the medium flowing in at least one direction in space in the body is attenuated by dephasing of the spins by maximizing gradient moments of the first order $M_1(t)$ in such direction in space according to the following relation:

$$M_1(t)=\gamma \cdot \int_0^t G(t').t'dt' \ .$$

12. (Currently Amended) A ~~process~~ method according to claim 9, wherein gradient echo pulse sequences are produced in the respective directions in space by inserting flow dephasing gradient pulses into flow-compensated imaging gradient echo pulse sequences.

13. (Currently Amended) A ~~process~~ method according to claim ~~12~~ 11, wherein M_1 satisfies the following relation:

$$M_1(t; Gbipolar, tramp, tplateau, tsep) = \gamma . Gbipolar . (tramp + tplateau) . (2tramp + tplateau + tsep)$$

wherein

γ	is the gyromagnetic ratio of the atomic nuclei,
Gbipolar	is the maximum gradient field intensity,
Tramp	is rise/fall time when the gradient field is turned on/off,
tplateau	is the time interval during which *Gbipolar* is reached, and
tsep	is the time interval between two gradient pulses.

14. (Currently Amended) A ~~process~~ method according to claim 9, wherein the MR contrast medium is administered intravenously to a human or animal body.

15. (Currently Amended) A ~~process~~ method according to claim 9, wherein the MR contrast medium is lymph-passable and/or plaque-passable.